SDMS Document ID

2118915 EPA NO. <u>U590002</u> FILE NO. <u>P2-7</u>

ANALYTICAL REPORT

Attachment F

Information Request #3



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

DATE SAMPLED:

LAB NO:

GROUP NO:

11/22/88

6602

645

TIME SAMPLED:

Mr. Ron Kahler ATTN:

DATE RECEIVED: 11/23/88 DATE REPORTED: 12/16/88 DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 1B SOLIDS

RESULT

ANALYSIS

AS RECEIVED

EP TOX EXTRACTION:

ARSENIC

<0.5 mg/1

The reporting limit for arsenic was increased due to

the nature of the sample matrix.

BARIUM <0.1 mg/10.051 mg/1CADMIUM < 0.05 mg/1CHROMIUM LEAD <0.05 mg/1MERCURY <0.0005 mq/l SELENIUM <0.02 mg/1SILVER <0.01 mq/1

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the subelined in Section 261.24 Federal Register 1980 p. 33122.

*Analysis performed by, Lancaster Laboratories, Inc. Respectfully submitted,

Warner Woolfan Son Warner R. Woolfenden, Ph.D. Technical Director

Lee A. Seats, B.S. Mgr. Inorganic Analysis



6602

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88

LAB NO:

GROUP NO:

Mr. Ron Kahler ATTN:

TIME SAMPLED:

DATE RECEIVED: 11/23/88 DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 1B SOLIDS

RESULT

ANALYSIS

AS RECEIVED

TOTAL ORGANIC CARBONS

550. mg/kg

MOISTURE

32.3 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

<6. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warretbookfung



CLIENT: Hecla Mining Company

ATTN: Mr. Ron Kahler

P.O. Box C-8000

Coeurd' Alene, ID. 83814

LAB NO:

6603

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID: POND 1B SOLUTION

	R	ESULT
ANALYSIS	AS REC	EIVED
	~	
Нq	4.37	
ARSENIC	3.05	mg/l
BARIUM	<0.5	mg/l
CADMIUM	1.05	mg/l
CHROMIUM	<0.2	mg/l
COPPER	0.51	mg/l
LEAD	<1.	mg/l
MERCURY	<0.005	mg/1
SELENIUM	<0.1	mg/l
SILVER	<0.05	mq/l

TOTAL ORGANIC CARBONS

16. mg/l

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warner Woodforden



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

Mr. Ron Kahler ATTN:

LAB NO:

6598

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88 DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 1C SOLIDS

RESULT

ANALYSIS

AS RECEIVED

EP TOX EXTRACTION:

ARSENIC AQUEOUS 129. mq/1<0.1 mg/1BARIUM CADMIUM 65.4 mg/1

0.54 mg/lCHROMIUM LEAD $3.13 \, \text{mg/l}$ MERCURY <0.0005 mg/l

SELENIUM <0.1 mg/lThe reporting limit for Selenium was increased due to

the nature of the sample matrix.

SILVER

0.11 mg/1

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the submitted and provided the submitted and provided the submitted as defined in Section 261,24 Federal Register 1980 p. 33122. Assente and cade in the companies.

*Analysis performed by, Lancaster Laboratories, Inc.

Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D.

Warner Woodfenden



6598

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88 TIME SAMPLED:

LAB NO:

GROUP NO:

ATTN: Mr. Ron Kahler

DATE RECEIVED: 11/23/88
DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 1C SOLIDS

RESULT

ANALYSIS

AS RECEIVED

TOTAL ORGANIC CARBONS

570. mg/kg

MOISTURE

5.4 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

6. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

GROUP NO:

LAB NO:

6599

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

Mr. Ron Kahler ATTN:

DATE RECEIVED: 11/23/88 DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 1C SOLUTION

	R	ESULT
ANALYSIS	AS REC	EIVED

рН	0.24	
ARSENIC	11800.	mg/l
BARIUM	<0.5	mg/l
CADMIUM	221.	mg/l
CHROMIUM	3.3	mg/l
COPPER	8210.	mg/l
LEAD	63.	mg/l
MERCURY	0.027	mg/l
SELENIUM	<1.	mg/l
SILVER	0.06	mq/l

TOTAL ORGANIC CARBONS

140. mg/1

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warnercookfander



6608

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

LAB NO:

GROUP NO:

ATTN: Mr. Ron Kahler DATE SAMPLED: 11/22/88 TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88 DISPOSAL DATE: 01/19/89

POND 2 SOLIDS SAMPLE ID:

ANALYSIS

RESULT AS RECEIVED

EP TOX EXTRACTION:

4.71 mg/l ARSENIC BARIUM <0.1 mg/1-0.546 mg/lCADMIUM $0.15 \, \text{mg/l}$ CHROMIUM 2.72 mg/1LEAD <0.0005 mg/1MERCURY <0.02 mg/1SELENIUM SILVER 0.01 mg/l

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards:

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the many the state of the state Original of the Section 261.24 Federal Register 1980 p. 33122.

*Analysis performed by, Lancaster Laboratories, Inc. Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D. Technical Director

Warnerwoolfind



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

ATTN: Mr. Ron Kahler LAB NO:

6608

GROUP NO:

645

DATE SAMPLED: 11/22/88 TIME SAMPLED:

DATE RECEIVED: 11/23/88 DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 2 SOLIDS

TOTAL ORGANIC CARBONS

ANALYSIS

RESULT

AS RECEIVED

2100. mg/kg

MOISTURE

28.9 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

<8. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warreld solfen Em



CLIENT: Hecla Mining Company

LAB NO:

6609

P.O. Box C-8000

GROUP NO:

645

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88

645

MINE C

TIME SAMPLED:

ATTN: Mr. Ron Kahler

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

correction from lab

SAMPLE ID:

POND 25 SOUTH SOLUTION

RESULT AS RECEIVED	
0.95	
720.	mg/l
<0.5	mg/1
19.8	mg/l
7.4	mg/l
1170.	mg/l
5.	mg/1
<0.005	mg/l
<1.	mg/l
0.1	mg/l
	AS REC 0.95 720. <0.5 19.8 7.4 1170. 5. <0.005 <1.

TOTAL ORGANIC CARBONS

490. mg/l

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc. Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D.

Warner Woolfen An



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

GROUP NO:

LAB NO:

6600

DATE SAMPLED: 11/22/88

645

TIME SAMPLED:

ATTN: Mr. Ron Kahler DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 2A SOLIDS

RESULT

ANALYSIS _____

AS RECEIVED

EP TOX EXTRACTION:

ARSENIC	12.1	mg/1
BARIUM	<0.1	mg/l
CADMIUM	0.096	mg/l
CHROMIUM	0.42	mg/1
LEAD	0.21	mg/l
MERCURY	<0.0005	mg/1
SELENIUM	<0.02	mg/l
SILVER	<0.01	mq/1

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the submitted sample DOFF exhibit the characteristic of M. Toxic v as defined in Section 261.24 Federal Register 1980 p. 33122. Accomic oversite tit.

*Analysis performed by, Lancaster Laboratories, Inc. Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D.

Werner Woofen for



6600

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

GROUP NO: DATE SAMPLED: 11/22/88

LAB NO:

ATTN: Mr. Ron Kahler

TIME SAMPLED:

DATE RECEIVED: 11/23/88 DATE REPORTED: 12/16/88 DISPOSAL DATE: 01/15/89

SAMPLE ID:

POND 2A SOLIDS

ANALYSIS

RESULT

AS RECEIVED

TOTAL ORGANIC CARBONS

1400. mg/kg

MOISTURE

16.3 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

There was insufficient sample to perform sulfide analysis.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

ATTN: Mr. Ron Kahler

LAB NO:

6601

GROUP NO: 645

DATE SAMPLED: 11/22/88 TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88 DISPOSAL DATE: 01/15/89

DECIII T

SAMPLE ID:

POND 2A SOLUTION

ANALYSIS	AS RECEIVED	
Яq	1.23	
ARSENIC	263.	mg/l
BARIUM	<0.5	mg/l
CADMIUM	3.78	mg/l
CHROMIUM	7.6	mg/l
COPPER	334.	mg/l
LEAD	4.	mg/l
MERCURY	<0.005	mg/l
SELENIUM	<1.	mg/l
SILVER	<0.05	mg/l

TOTAL ORGANIC CARBONS

150. mg/l

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warmer Workfalm



CLIENT: Hecla Mining Company

LAB NO:

6610

P.O. Box C-8000

GROUP NO:

645

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88

TIME SAMPLED: 11/22

ATTN: Mr. Ron Kahler

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 3A SOLIDS

RESULT

ANALYSIS

AS RECEIVED

NO RECEIVED

EP TOX EXTRACTION:

ARSENIC	7.90	mg/l
BARIUM	<0.1	mg/1
CADMIUM	0.152	mg/l
CHROMIUM	3.01	mg/l
LEAD	<0.2	mg/1

The reporting limits for lead was increased due to

the nature of the sample matrix.

MERCURY <0.0005 mg/l SELENIUM <0.02 mg/l SILVER <0.01 mg/l

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the submitted says 20056 Pederal Register 1980 p. 33122.

*Analysis performed by, Lancaster Laboratories, Inc.

Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D.

Warner Worken Am



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

ATTN: Mr. Ron Kahler

LAB NO:

6610

GROUP NO:

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 3a SOLIDS

RESULT

ANALYSIS

AS RECEIVED

TOTAL ORGANIC CARBONS

2200. mg/kg

MOISTURE

34.5 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

<6. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warner Woofen En



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

Mr. Ron Kahler ATTN:

LAB NO:

6612

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

RESULT

DATE REPORTED: 12/20/88 DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 3A SOLUTION

ANALYSIS	AS RECEIVED			
·	pH ,	1.48		1.8
Fe & 11. 51.	ARSENIC	218.	mg/l	84
	BARIUM //	<0.5	mg/l	
	CADMIUM	2.59	mg/l	
و يعالم ا	CHROMIUM	37.0	mg/1	
and silver ter	COPPER	97.6	mg/l	
المستعملين المستعملين	LEAD	1.	mg/1	
	MERCURY	<0.005	mg/l	
	SELENIUM	<1.	mg/l	
	SILVER	<0.05	mg/l	

TOTAL ORGANIC CARBONS

210. mg/l

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

WarnerWolfenham



6606

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88
TIME SAMPLED:

GROUP No:

LAB NO:

ATTN: Mr. Ron Kahler

DATE RECEIVED: 11/23/88
DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 3B SOUTH SOLIDS

RESULT AS RECEIVED

ANALYSIS

AS RECEIVED

EP TOX EXTRACTION:

ARSENIC	3.52	mg/l
BARIUM	<0.1	mg/1
CADMIUM	0.117	mg/l
CHROMIUM	1.13	mg/l
LEAD	<0.2	mq/l

The reporting limit for arsenic was increased due to

the nature of the sample matrix.

MERCURY	<0.0005	mg/l
SELENIUM	<0.02	mg/l
SILVER	<0.01	mg/l

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2,

Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0,

Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Resed on the determinations performed the

Based on the determinations performed, the company of the company

*Analysis performed by, Lancaster Laboratories, Inc.

Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D. Technical Director

Warner Woolfen Cen



CLIENT: Hecla Mining Company

ATTN: Mr. Ron Kahler

P.O. Box C-8000

Coeurd' Alene, ID. 83814

LAB NO: GROUP NO:

6606

DATE SAMPLED: 11/22/88

645

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

SAMPLE ID:

POND 3B SOUTH SOLIDS

RESULT

ANALYSIS

AS RECEIVED

TOTAL ORGANIC CARBONS

4200.

MOISTURE

23.5 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

<6. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

LAB NO:

6607

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

Mr. Ron Kahler ATTN:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

DECUT OF

SAMPLE ID: POND 3B SOUTH SOLUTION

	KESULI
ANALYSIS	AS RECEIVED

рH	1.14	
ARSENIC	53.5	mg/l
BARIUM	<0.5	mg/l
CADMIUM	4.43	mg/l
CHROMIUM	40.5	mg/l
COPPER	4.48	mg/l
LEAD	0.08	mg/l
MERCURY	<0.005	mg/1
SELENIUM	<1.	mg/l
SILVER	<0.05	mg/l
		•

TOTAL ORGANIC CARBONS

190. mq/1

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TCC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warmel of a lan



6605

645

CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

DATE SAMPLED: 11/22/88
TIME SAMPLED:

LAB NO:

GROUP NO:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/20/88

DISPOSAL DATE: 01/19/89

RESULT.

ATTN: Mr. Ron Kahler

Korth

SAMPLE ID: POND 3B SOLU

ANALYSIS	AS RECEIVED	
На	1.70	
ARSENIC	32.5 mg/l	
BARIUM	<0.5 mg/l	
CADMIUM	0.95 mg/l	
CHROMIUM	12.1 mg/l	
COPPER	6.05 mg/l	
LEAD	<1. mg/1	
MERCURY	<0.005 mg/l	
SELENIUM	<1. mg/l	
SILVER	<0.05 mg/l	

TOTAL ORGANIC CARBONS

69 mg/1

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D. Technical Director

Warnerwoolpula



CLIENT: Hecla Mining Company

P.O. Box C-8000

Mr. Ron Kahler

Coeurd' Alene, ID. 83814

LAB NO:

6596

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

ATTN:

SURGE POND SOLID

RESULT

ANALYSIS

AS RECEIVED

EP TOX EXTRACTION:

ARSENIC AQUEOUS	11.2	mg/1
BARIUM	<0.1	mg/l
CADMIUM	0.153	mg/l
CHROMIUM	0.08	mg/l
LEAD	2.85	mg/l
MERCURY	<0.0005	mg/1
SELENIUM	<0.02	mg/l
SILAED	∢ ∩ ∩1	ma/1

The above analyses were performed on the EP Toxcicity leachate of the submitted waste prepared according to the procedure specified in Federal Register May 19, 1980 p. 33127.

A sample is considered EP Toxic if any of the contaminate concetrations (mg/l) in the leachate exceed the following maxima (100 time the Primary Drinking Water Standards):

Barium 100.0, Cadmium 1.0, Chromium 5.0, Lead 5.0, Mercury 0.2, Selenium 1.0, Silver 5.0, Endrin 0.02, Lindane 0.4, Methoxychlor 10.0, Toxaphene 0.5, 2,4-D 10.0, 2,4,5-TP 1.0.

Based on the determinations performed, the subject of the subject Federal Register 1980 p. 33122.

Analysis performed by, Lancaster Laboratories, Inc. Respectfully submitted,

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Warner R. Woolfenden, Ph.D.

Warner Work (man



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

ATTN: Mr. Ron Kahler

LAB NO:

6596

GROUP NO:

645

DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88

DISPOSAL DATE: 01/15/89

SAMPLE ID:

SURGE POND SOLID

RESULT

ANALYSIS

AS RECEIVED

TOTAL ORGANIC CARBONS

360. mg/kg

MOISTURE

36.0 % by wt.

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.

SULFIDE

<6. mg/kg

Analysis performed by, Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warner Woolfonden



CLIENT: Hecla Mining Company

P.O. Box C-8000

Coeurd' Alene, ID. 83814

ATTN: Mr. Ron Kahler GROUP NO:

LAB NO:

6597

645 DATE SAMPLED: 11/22/88

TIME SAMPLED:

DATE RECEIVED: 11/23/88

DATE REPORTED: 12/16/88 DISPOSAL DATE: 01/15/89

SAMPLE ID:

SURGE POND SOLUTION

	RESULT
AS	RECEIVED

ANALYSIS	AS RECEIVED	
рН	0.01	
ARSENIC	3350.	mg/l
BARIUM	<0.5	mg/l
CADMIUM	22.6	mg/l
CHROMIUM	1.5	mg/l
COPPER	3190.	mg/l
LEAD	3.	mg/l
MERCURY	0.027	mg/l
SELENIUM	<1.	mg/l
SILVER	0.07	mg/l

TOTAL ORGANIC CARBONS

190. mg/l

The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC".

The reporting limits for the metals determination were increased due to the nature of the sample matrix.

*Analysis performed by. Lancaster Laboratories, Inc.

Lee A. Seats, B.S. Mgr. Inorganic Analysis

Respectfully submitted,

Warner R. Woolfenden, Ph.D.

Warner Woogen Com